

numbered, and to be obliged to consult a list to see what they are, especially when we are sometimes greeted with fanciful titles instead of place-names. "Dame Nature's Painters" does not much enlighten us, but it looks very like a view down the lower part of the Via Mala. But the author has tried the dangerous experiment of mingling poetry and science, and we cannot honestly congratulate him on his success.

T. G. B.

#### TRACHOMA.

*Trachoma.* By Dr. J. Boldt. Translated by J. Herbert Parsons, D.Sc., F.R.C.S., and Thomas Snowball, M.B., C.M. With an introductory chapter by E. Treacher Collins, F.R.C.S. Pp. lii + 232. (London: Hodder and Stoughton, 1904.)

DR. BOLDT'S monograph on "Trachoma," published at the end of last year, deals with a subject presenting many problems to which no satisfactory solutions can at present be offered. It is therefore a matter for congratulation that an English translation of such an excellent *résumé* of the subject has been prepared. Dr. Boldt has been working for many years in one of the trachoma infested centres of Germany, and has been constantly faced during that time with these unsolved problems, and in the book before us he clears the ground of all the lumber which gathers round any subject of discussion, and states clearly the present condition of our knowledge and the lines on which future investigation must go.

The first and most important difficulty met in dealing with trachoma is that at present the ætiological factor is unknown. The discussion of this question in chapter iv. particularly, and incidentally in chapters iii. and v., will be, to ophthalmic surgeons, the most interesting part of the book. The author distinctly inclines to the view that there is a specific organism, the primary cause of trachoma, as yet undiscovered, but that also an individual predisposition and a number of subsidiary causes, such as climate, soil and race, overcrowding, uncleanness, and other social evils, are also contributing causes.

Many workers at the present time are inclining to lay much greater stress on the importance of the individual predisposition and to hold the view that the disease may be set up by any bacterium which is pathogenic for the conjunctiva. The large number of cases in which some scrofulous taint can be traced is distinctly in favour of this view. It has been frequently shown that in such people any infection will give rise to a lymphoid hypertrophy, and the essential pathology of trachoma is primarily a hypertrophy of lymphoid follicles with subsequent degeneration of the lymphoid tissue and formation of scar tissue. Dr. Boldt, with absolute fairness, gives both hypotheses and the arguments which have been advanced by various writers in support of them.

It would be of undoubted benefit to the community if this book were to get into the hands of two classes in particular, the men who are concerned in the administration of the Poor Laws of the country, and those concerned in the medical and sanitary administration of

the Army. The excellent introductory chapter by Mr. Treacher Collins gives details of the most useful work which is being carried on at Swanley, and of the influence that proper hygienic measures have had generally in checking the disease. Dr. Boldt gives similar details of the progress and subsequent checking of trachoma throughout the various countries of Europe. It would indeed be well if the last chapter were separately printed and distributed as a pamphlet to the various boards of guardians and health officers throughout the Empire.

We have nothing but praise for the way in which the translators have carried out their work. We could nowhere detect a trace of German origin in the style.

#### OUR BOOK SHELF.

*The Cyclones of the Far East.* By Rev. José Algué, S.J. Second (Revised) Edition. Pp. 283. (Manila: Bureau of Public Printing, 1904.)

In the present edition the author has extended the area dealt with in the earlier editions, and as abundant additional data have been collected, not only from the Philippines themselves, but also from the surrounding coasts, this information has now been embodied. The author says that, "owing to the opening up of the Far East in recent years, an endeavour has been made to extend the usefulness of the work by giving a greater compass to the study of the phenomena which cause, accompany, and follow the atmospheric perturbances which are experienced in the various seas of the Far East." The title of the revised edition is changed from "Cyclones of the Philippines" to "The Cyclones of the Far East." The present edition appears in English, and is freed from the formidable list of errors found in the English version of an earlier edition. Among the many additions contained in this new edition may be mentioned some practical rules for navigating in case of encountering a typhoon, and a list and description of the ports of refuge during storms in the Far East, especially in the Philippine Archipelago.

Commendation should certainly be given of the careful arrangement and division of the whole work, which aid much the general study and grip of the valuable material, whilst numerous illustrations add much to the elucidation of the subject. Father Algué must be credited with what is only too commonly overlooked. At the conclusion of each chapter reference is given to the works which may be consulted in connection with the branch of the subject dealt with. The references appear to have been chosen with the greatest impartiality and with the sole desire to render the work as complete as possible. This example may commend itself to authors of other branches of scientific work.

The principal cause which influences the progressive movement of typhoons is said to be the general movement of the atmosphere in which they take place, not of that part only which overlies the land and sea over which they pass, but especially of that portion of the atmosphere which moves at higher altitudes, as we are to look there for the seat of the greater part of the energy and power which nourish and sustain the atmospheric whirls. This opinion is endorsed by all who discuss the nature and law of storms, but, unfortunately, too little light can be thrown on the movement of the upper air, although praiseworthy efforts are being made in this direction.

The storms which visit the Philippine Archipelago vary greatly in frequency according to season, the months with the greatest number being July, August, and September, whilst the months with the least frequency are January, February, and March. Much good work is done in the classification of cyclones, and diagrams are given showing the paths of eleven different types. Considerable attention is paid to the precursory signs of cyclones, and naturally much importance in this direction is attached to the form and movement of clouds.

The whole treatise is suggestive of further scientific inquiry, and Father Algué has done much by this work to advance our knowledge of the law of storms.

C. H.

*The Animals of New Zealand: an Account of the Colony's Air-breathing Vertebrates.* By F. W. Hutton and J. Drummond. Pp. xiv+381; illustrated. (Christchurch and London: Whitcombe and Tombs, Ltd., 1904.)

SOME months ago, when noticing Captain Hutton's valuable "Index" of the New Zealand fauna, we had occasion to refer to the impending issue of the present volume; now that it is before us, we are happy to be able to state that it fully realises our expectations, and forms a most valuable history of the air-breathing vertebrates of the colony, written in a pleasant style which cannot fail to make it acceptable to a large circle of readers. At starting, the authors refer to their indebtedness to the late Mr. T. H. Potts, who did such good work in describing a fast vanishing fauna before it was too late. The melancholy story of the waning of this curious and interesting fauna forms, indeed, the key-note of the introduction of the volume. From the time that Captain Cook, in 1773, turned down pigs in Queen Charlotte's Sound, the native fauna has had to contend with competitors from Europe of a stronger and more aggressive type, the natural result being that many forms, like the tuatera lizard, have already disappeared from the mainland, although in some instances surviving in the adjacent islets, and many more are destined to go ere long. Among the latter (if, indeed, it be not already extinct) is the short-tailed bat, the sole representative of the genus *Mystacops*, its rarity, or extermination, being attributed to the destruction of insect life caused by the introduction of European birds.

From a purely commercial standpoint the authors do not, however, by any means condemn the introduction of many of the foreign species, having even a good word to say for the much abused sparrow. "Without the sparrow, or some other bird equally common," they write, "residents in the colony would be over-run with the insects again, and life would be insupportable." The phrase concerning insects, it may be explained, refers to the "plagues" of various species which occurred when European food-crops were first introduced into the colony. On the other hand, the introduction of certain species, such as the greenfinch and, above all, the rabbit, is most strongly condemned. The acclimatisation of several kinds of deer is considered to be of considerable advantage to the general prosperity of the islands, as it leads to the visits of European sportsmen.

Among the species which have suffered most severely from foreign competition may be mentioned the two bats, the kiwis, the weka rail, and the tuatera. The moas appear to have been completely and the *Notornis* all but exterminated by the Maories before the European advent.

Limitations of space alone prevent further commendation of a very excellent, interesting, and beautifully illustrated work.

*Zellenmechanik und Zellenleben.* By Prof. Dr. Rhumbler. Pp. 43. (Leipzig: J. A. Barth, 1904.) Price 1 mark.

THIS little work represents a sketch of the author's views on the causes and means of manifestation of cellular activity. The point of view adopted is a materialistic one. It is considered that the whole subject should be dealt with from the physical or the physico-chemical aspect, even when this fails to present a complete solution of all the difficulties that may arise. It is becoming more and more recognised that many of the acts which used to be regarded as specially the outcome of vital activity find their parallel in inorganic nature. An amoeba when ingesting a filament of oscillatoria much longer than itself is able completely to enclose it because the algal thread becomes coiled up within the protoplasmic body of the protozoan. But an exactly similar state of things is produced if a drop of chloroform is placed in water and a filament of shellac be then presented to it. The filament is drawn into the chloroform, and coiled up much as the alga in the amoeba; and if a short glass thread be coated with shellac, it is also "ingested," but as the lac becomes dissolved the glass thread is gradually extruded. The whole question here resolves itself into one of surface tension, and perhaps the processes of ingestion and excretion may ultimately prove to be essentially similar in nature.

Again, the remarkable uniformity in the details of nuclear divisions (karyokinesis), from whatever source the cells may originate, strongly suggests that a comprehensive physical explanation of the process will one day be forthcoming.

But although the physical aspects of cellular activity will certainly become more clear and definite, this is only the first step on to the threshold of the temple in which the secret of life is guarded. Behind the proximate physical phenomena lies a vast complex of changing chemical conditions, and it will be long before we are likely to be able exhaustively to analyse them. The more successfully we do so, however, the more nearly shall we be able to grapple with the physical problems of movement and the like. Rhumbler regards changes of surface tension, and the reactions that affect it, as constituting one of the most profitable of the many possible lines of cytological investigation.

*Studies in Astronomy.* By J. Ellard Gore, F.R.A.S., M.R.I.A. Pp. xi+336. (London: Chatto and Windus, 1904.) Price 6s.

IN this book the reader is presented with a series of disconnected essays on a variety of astronomical subjects, many of which include interesting and suggestive results of calculations made by the author. The subjects range from "giant telescopes" to the "construction of the visible universe," but Jupiter is the only planet to which any detailed reference is made, and the sun is only dealt with from the point of view of its stellar magnitude and its motion in space. The chapter on "Messier's nebulae," bringing together all the recent information with regard to these objects, will be of considerable value to those who possess telescopes, and the notes comprising "recent advances in stellar astronomy" give a useful summary of the state of our knowledge of the subjects dealt with at the beginning of the present year.

Most of the papers have already appeared as magazine articles, and, notwithstanding the revision which has been made for the present purpose, there is necessarily a considerable amount of repetition. Apart from this, however, the book provides a very acceptable course of not too difficult reading for those who have a general elementary acquaintance with the subject.